

To: R9.Info[R9.Info@epa.gov]

Ex. 6 - Personal Privacy

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Cc: SHOJI, KERRY[SHOJI.KERRY@EPA.GOV]; COHEN, Deborra[Cohen.Deborra@epa.gov]

From: Macler, Bruce

Sent: Mon 9/21/2015 6:04:59 PM

Subject: RE: Chromium-6 in drinking water

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Not everything you read, or see in a movie, is true. This is the case for hexavalent chromium. Despite what Erin Brokovich says, and was said in *Erin Brokovich*, the toxicity of hexavalent chromium in drinking water is overstated.

It is true that inhalation of high concentrations of chromate paint mists or fumes from chrome plating over many years can lead to lung cancer. Hexavalent chromium is oxidizing and can burn lung and skin tissues. People that are routinely exposed to air-borne chromate paint or chromium fumes can get rashes and other dermal damage. This has been known for a long time.

The situation for drinking water is quite different. Instead of air with pure chromium fumes or high-chromate paint mist, drinking water typically might have chromium in the parts per billion level. This is important in two ways. If you think about it, blobs of paint mist or fumes are much larger in size than individual molecules dissolved in a lot of water. The mists and fumes can coat and react with lung and skin tissue far more effectively than dilute solutions in the stomach or intestines. And of course the concentrations are far different. Since health risks are usually proportional to concentration, the risks for part per billion exposures are far less than for high concentrations.

USEPA and other drinking water programs take very conservative approaches to protecting the public from drinking water contaminants. We usually try to achieve a risk level to the more-sensitive people of no more than one excess cancer per million people exposed. Therefore, our drinking water standards are very stringent. Right now, USEPA regulates chromium in drinking water at 100 micrograms/liter. This is for total chromium, but as you know, only the hexavalent chromium is toxic. Trivalent chromium is an essential nutrient. So depending on how much of the chromium is hexavalent, the protection may be greater.

With respect to Hinkley, the California Department of Public Health did an epidemiological study of the residents to see if they were actually getting sick from the hexavalent chromium in the dust and water. The study showed no differences in the health of the Hinkley residents

compared to people in other communities that had not been exposed to hexavalent chromium.

Finally, our bodies have many protective mechanisms for contaminants of all types. Just because one or another material is present in air or water doesn't mean that it has an adverse effect on health.

If you have further questions or thoughts, feel free to reply.

Bruce A. Macler, PhD

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From: Holoubek, Helga **On Behalf Of** R9.Info
Sent: Monday, September 21, 2015 10:06 AM
To: Macler, Bruce
Cc: SHOJI, KERRY; COHEN, Deborra
Subject: FW: Chromium-6 in drinking water

Hi Bruce,

Could you please respond to the email below or forward it to someone in the Water Division who could? Please copy the library on any response so we can close the matter on our end.

Thank you,

Helga

Helga G. Holoubek, MLIS

Librarian (contractor, ASRC Primus)

U.S. EPA Region 9 Library/ 75 Hawthorne Street/ San Francisco, CA 94105-3920

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From: Ex. 6 - Personal Privacy
Sent: Thursday, September 17, 2015 4:16 AM
To: R9.Info
Cc: Ex. 6 - Personal Privacy
Subject: Concerning environmental health

Thursday 17 September 2015

Attention: Environmental Protection Agency, EPA

We are two students from Esbjerg, Denmark. We go to Rybners Teknisk Gymnasium and are having a subject on sustainable development. We are studying the negative effects of chromium-6 as you may know, it causes many health risks.

Chromium is an odorless and tasteless metallic element. It is found naturally in rocks, plants, and volcanic dust. The most common forms of chromium that occur in natural waters in the

environment are trivalent chromium (chromium-3) and hexavalent chromium (chromium-6).

Chromium-3 is an essential human dietary element and occurs naturally in many vegetables, fruits and meats. Chromium-6 occurs naturally in the environment from the erosion of natural chromium deposits, but industrial processes can also produce it. There are demonstrated instances of chromium being released in to the environment by leakage, poor storage, or inadequate industrial waste disposal practices.

Chromium-3 is a nutritionally essential element in humans and is often added to vitamins as a dietary supplement. It has relatively low toxicity and would be a concern in drinking water, only at very high levels of contamination. Chromium-6 is more toxic and poses potential health risks. People who use water containing chromium in excess of the maximum contaminant level over many years can be experiencing allergic dermatitis. Dermatitis is a condition of the skin in which it becomes red, swollen, and sore, sometimes with small blisters.

Every public water system's annual water quality report will provide information if total chromium is detected in the drinking water it delivers. The water quality is sent to customers each year and may be found on the public water system's website.

Consumers served by private wells can have their water tested by a state certified laboratory.

If it shows that the contamination of total chromium in the water is higher than the standards, some of it can be removed with some home treatment devices that are certified by organizations. If it is chosen to use a home treatment device, it is important to follow the manufacturer's operation and maintenance instructions carefully in order to make sure the device works properly. Also before doing this, consumers should be aware that the current EPA drinking water standard for chromium-6 requires that public water systems provide drinking water that does not exceed a total chromium concentration of 100 ppb (parts pr. billion).

Chronic inhalation of chromium-6 has been shown to increase risk of lung cancer and may also damage the small capillaries in kidneys and intestines.

Other health risks have been listed beneath:

Skin irritation

Ulceration

Asthma

Nasal irritation

Nosebleed

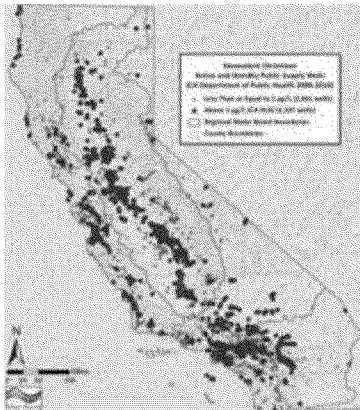
Respiratory irritation

Nasal cancer

Eye irritation

Liver damage

The list could go on, but I believe you got the point. I also believe you have seen or at least heard of the movie about Erin Brockovich, who is an ordinary woman who gets a job and is soon to find out about the water contamination in Hinkley where she sees several examples of health problems, which can be drawn to the exposure of chromium-6 in their water. In this case, the water system's reports weren't to find publically and the costumers weren't aware of the water contamination. Of course this sounds terrible, but is actually a reality for some people in the USA, including the people in Hinkley. In the article "*Erin Brockovich: The real-life unhappy ending*" the author sums up the use of chromium-6 has not stopped and that they made a study on how high the levels of chromium-6 in the water are in 35 different cities in the US. It turned out that 31 of the cities had too high levels of chromium-6. According to California regulators the level of hexavalent chromium in the water can not exceed 0,02 ppb.



The picture on the left shows the places in California where The Department of Public Health found chromium-6 contamination in the water. The green dots mean that there is less than 1 µg/L and the red dots mean that there is above 1 µg/L of chromium-6 in the drinking water.

We hope to get a response

Sincerely Ex. 6 - Personal Privacy from Denmark!